



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,649	06/28/2001	Siamack Nemazie	0924-MS-L-DIV1	2024

7590 01/04/2005
Robert Platt Bell
8033 Washington Road
Alexandria, VA 22308

EXAMINER

PHAN, RAYMOND NGAN

ART UNIT	PAPER NUMBER
----------	--------------

2111

DATE MAILED: 01/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/892,649	NEMAZIE ET AL.	
	Examiner	Art Unit	
	Raymond Phan	2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45, 48 and 49 is/are pending in the application.
- 4a) Of the above claim(s) 48 and 49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>062001</u> . | 6) <input type="checkbox"/> Other: _____ |

Part III DETAILED ACTION

Notice to Applicant(s)

1. This action is responsive to the following communications: response filed on April 23, 2003.
2. This application has been examined. Claims 1-45, 48-49 are pending.

Election/Restriction

3. Applicant's election without traverse of Group I (claims 1-45) in the reply filed on April 23, 2003 is acknowledged.

Claim Rejections - 35 USC § 112

4. Claims 30-38 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 30 (page 44, line 27), using the phrase, "...the microprocessor...", lacks proper antecedent basis and causes the claim to be vague and indefinite.

The remaining claims, not specifically mentioned, are rejected for incorporating the defects from the parent claim by dependency.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re*

Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1, 39 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 in Patent No. 6,314,480. Although the conflicting claims are not identical, they are not patentably distinct from each other because the minor variation of wordings, hard disk drive, disk surface, read/write heads, voice coil motor, a head preamplifier, in claim 1 are obvious expedients since elements (i.e. data storage device, media surfaces, read devices, actuator, a read device preamplifier) of claims 1, 39 of the present application still perform the same functions,

a host interface for interfacing with a host computer;

at least one internal communication and control bus, for transfer stored data and control data to and from elements within the integrated hard disk drive controller and interconnected with the host interface to transfer stored data and control data to and from the integrated data hard disk drive controller;

at least one of a read channel controller and a read/write channel controller coupled to the head preamplifier and the at least one internal communication and control bus, for receiving and processing read channel data from the head preamplifier;

a motion control servo logic, coupled to the at least one internal communication and control bus, and to the servo control, for generating control signals for driving the servo control;

a disk controller, coupled to the at least one internal communication and control bus, for transferring stored data to the host interface; and

a micro-controller, coupled coupled to the at least one internal communication and control bus, for generating control data to control devices within the integrated hard disk controller integrated circuit,

as claim 1 of the patent. In re Karlson, 136 USPQ 189 (ccPA 1963).

7. Claim 16 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 9 in Patent No. 6,314,480. Although the conflicting claims are not identical, they are not patentably distinct from each other because the minor variation of wordings, hard disk drive, disk surface, read/write heads, voice coil motor, a head preamplifier, in claim 9 are obvious expedients since elements (i.e. data storage device, media surfaces, read devices, actuator, a read device preamplifier) of claim 16 of the present application still perform the same functions,

a servo control coupled to the voice coil motor, for driving the voice coil motor in response to the control signals; and

an integrated hard disk drive controller integrated circuit comprising:

at least one internal communication and control bus, for transfer stored data and control data to and from elements within the integrated hard disk drive controller and interconnected with the host interface to transfer stored data and control data to and from the integrated data hard disk drive controller;

at least one of a read channel controller and a read/write channel controller coupled to the head preamplifier and the at least one internal communication and control bus, for receiving and processing read channel data from the head preamplifier;

a motion control servo logic, coupled to the at least one internal communication and control bus, and to the servo control, for generating control signals for driving the servo control;

a disk controller, coupled to the at least one internal communication and control bus, for transferring stored data to the host interface; and

a micro-controller, coupled to the at least one internal communication and control bus, for generating control data to control devices within the integrated hard disk controller integrated circuit,

as claim 9 of the patent. In re Karlson, 136 USPQ 189 (ccPA 1963).

8. Claim 30 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 7 in Patent No. 6,314,480. Although the conflicting claims are not identical, they are not patentably distinct from each other because the minor variation of wordings, hard disk drive, disk surface, read/write heads, voice coil motor, a head preamplifier, in claim 1 are obvious expedients since elements (i.e. data storage device, media surfaces, read devices, actuator, a read device preamplifier) of claim 30 of the present application still perform the same functions,

an integrated hard disk drive controller integrated circuit comprising:

a host interface for interfacing with a host computer;

at least one internal communication and control bus, for transfer stored data and control data to and from elements within the integrated hard disk drive controller and interconnected with the host interface to transfer stored data and control data to and from the integrated data hard disk drive controller;

at least one of a read channel controller and a read/write channel controller coupled to the head preamplifier and the at least one internal communication and control bus, for receiving and processing read channel data from the head preamplifier;

a motion control servo logic, coupled to the at least one internal communication and control bus, and to the servo control, for generating control signals for driving the servo control;

a disk controller, coupled to the at least one internal communication and control bus, for transferring stored data to the host interface; and

a micro-controller, coupled to the at least one internal communication and control bus, for generating control data to control devices within the integrated hard disk controller integrated circuit,

selectively multiplexing outputs of one or more of the disc controller, the microprocessor, and the read device data processor with one or more I/O pins such that the integrated circuit may selectively output signals from one or more of the of the disc controller, the microprocessor, read device data processor,

as claims 1 and 7 of the patent. In re Karlson, 136 USPQ 189 (ccPA 1963).

The mapping of the rejected claims in the present application to the Patent No. 6,314,480.

1, 39	1
9, 40	2
10, 41	3
11, 42	4
12, 43	5
13, 44	6
14, 45	7
15, 38	8
16	9
24	10
25	11
26	12
27	13
28	14
29	15
30	1 + 7

In a data storage device having one or more media surfaces, a corresponding number of at least read devices, a spindle motor for moving the one or more media surfaces, an actuator for moving the at least read devices relative to the one or more media surfaces, a read device

In a hard disk drive having one or more disk surfaces, a corresponding number of read/write heads, a spindle motor for rotating the disk surface, a voice coil motor for moving the heads relative to the disk surfaces, a head preamplifier coupled to the number of read/write heads,

preamplifier, coupled to the at least read devices, a servo control coupled to the actuator, for driving the actuator in response to control signals, in integrated data storage device controller integrated circuit comprising:

a host interface for interfacing with a host computer;

at least one internal communications and control bus, for transfer stored data and control data to and from elements within the data storage controller and interconnected with the host interface to transfer stored data and control data to and from the data storage device controller;

a read data processor, coupled to the read preamplifier and the at least one internal communications and control bus, for receiving and processing read device data from the head device preamplifier;

a servo control coupled to the voice coil motor for driving voice coil motor in response to control signals, an integrated hard disk drive controller integrated circuit comprising:

a host interface for interfacing with a host computer;

at least one internal communications and control bus, for transfer stored data and control data to and from elements within the integrated hard disk drive controller and interconnected with the host interface to transfer stored data and control data to and from the integrated data hard disk controller;

at least one of a read channel controller and a read/write channel controller, coupled to the head preamplifier and the at least one internal communication and control bus for receiving and processing read channel data from the head preamplifier;

a motion control servo logic, coupled to the at least one internal communications and control bus, and to the servo control, for generating control signals for driving the servo control;

a disk controller, coupled to the at least one internal communication and control bus, for transferring stored data to the host interface; and

a micro-controller, coupled to the at least one internal communication and control bus, for generating control data to control devices within the integrated hard disk controller integrated circuit,

Allowable Subject Matter

9. Claims 1-45 are allowable over the prior art of records.
10. Claims 30-38 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
11. The following is an Examiner's statement of reasons for the indication of allowable subject matter: Claims 1, 16, 30, 39, are allowable over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of the said prior arts which teach an integrated data storage device controller integrated circuit comprising

at least one internal communication and control bus, for transfer stored data and control data to and from elements within the integrated data storage controller and interconnected with the host interface to transfer stored data and control data to and from the integrated data storage controller;

a read device processor, coupled to the read device preamplifier and the at least one internal communication and control bus, for receiving and processing read device data from the read device preamplifier;

a motion control servo logic, coupled to the at least one internal communication and control bus, and to the servo control, for generating control signals for driving the servo control;

a disc controller, coupled to the at least one internal communication and control bus, for transferring stored data to the host interface; and

a micro-controller, coupled to the at least one internal communication and control bus, for generating control data to control devices within the integrated data storage device controller integrated circuit (claims 1, 16, 39);

selectively multiplexing outputs of one or more of the disc controller, the microprocessor, and the read device data processor with one or more I/O pins such that the integrated circuit may selectively output signals from one or more of the disc controller, the microprocessor, read device data processor (claim 30).

The remaining claims, not specifically mentioned, are allowed for the same reason as set for claims 1, 16, 30, 39.

Conclusion

12. Claims 1-45 are rejected. Claims 46-47 are canceled. Claims 48-49 are withdrawn.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Raymond Phan, whose telephone number is (571) 272-3630. The examiner can normally be reached on Monday-Friday from 6:30AM- 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Primary, Paul Myers can be reached on (571) 272-3639 or via e-mail addressed to paul.myers@uspto.gov. The fax phone number for this Group is (703) 872-9306.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [raymond.phan@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see [hop://pair-direct.uspto.gov](http://pair-direct.uspto.gov). Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 central telephone number is (571) 272-2100.

A handwritten signature in black ink, appearing to read "Raymond Phan", with a long horizontal flourish extending to the right.

Raymond Phan
12/21/04